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INVESTOR IN PEOPLE

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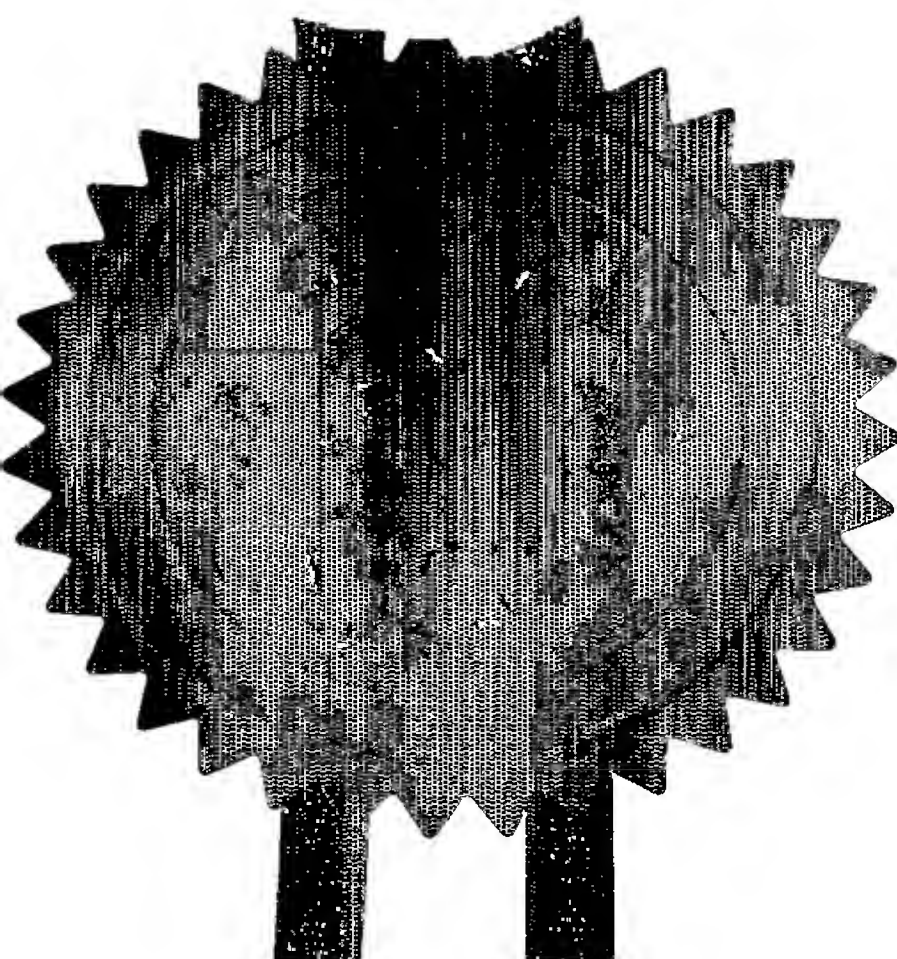
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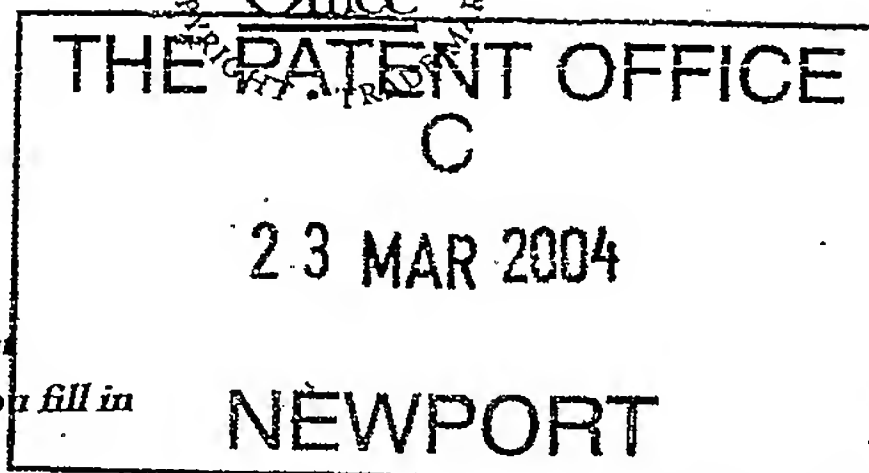
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The Patent Office

Cardiff Road
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1. Your reference

RRH/KH/RYANJ.1

2. Patent application number

(The Patent Office will fill this part in)

23 MAR 2004

0406459.8

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Anthony RYAN
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8834590001

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

8834608001

4. Title of the invention

Improvements in and relating to
Electrically Heated Plant Propagators

5. Name of your agent (if you have one)

Wynne-Jones, Lainé & James,

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

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1792002

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No

Answer YES if:

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- b) there is an inventor who is not named as an applicant, or
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Patents Form 1/77

9. Accompanying documents: A patent application must include a description of the invention. Not counting duplicates, please enter the number of pages of each item accompanying this form:

Continuation sheets of this form

Description

5

Claim(s)

0

Abstract

0

Drawing(s)

2

X 2/2

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for a preliminary examination and search (Patents Form 9/77)

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Any other documents (please specify)

11. I/We request the grant of a patent on the basis of this application.

Signature(s)

Wynne-Jones, Lainé & James

(Wynne-Jones, Lainé & James)

Date

22.03.04

12. Name, daytime telephone number and e-mail address, if any, of person to contact in the United Kingdom

R R Halstead
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Improvements in and relating to electrically heated plant propagators

This invention relates to electrically heated plant propagators.

It is known to electrically heat plant propagators by providing under soil heating elements which keep the soil at a required temperature and which, in turn, keeps the air within the propagator also at an elevated temperature relative to the ambient temperature of the propagator's surroundings. In this way seeds can be induced to germinate before they would ordinarily do so and the growth of seedlings may subsequently be accelerated within the protection afforded by the usually transparent cover or lid.

A problem with such known plant propagators is that they are prone to induce condensation therewithin which may damage delicate plants and seedlings, cause e.g. mildew to build up, as well as reduce the transmission of light into the propagator, thereby reducing the amount of incoming ultraviolet radiation required in order for photosynthesis to take place. A further problem is that such under soil heating may provide local hotspots which could damage the roots of a plant and/or may dry out parts of the soil, thereby impeding the growth of roots.

The present invention is derived from the surprising realisation that the problem of the prior art may be obviated by heating the propagator in a different way which mimics the way in which vehicle windscreens are heated.

According to the invention there is provided an electrically heated plant propagator comprising a soil tray and a transparent cover or lid, characterised in that the cover or lid has electrically conductive heating elements on or in the inner surface of the cover or lid, the heating elements being connectable to an

electric power supply by which the heating element, through resistive heating, heats the inside of the plant propagator when the cover or lid is closed.

Conveniently, a spacer collar is provided between the cover and lid and the outer rim of the tray, which is preferably transparent, and provides room for plants to grow upwards before entering the space afforded by the inside of the cover or lid. The spacer collar may be integral with the cover or lid, or it may be separate, or it may be integral with the tray.

Preferably, the spacer collar is integral with the cover or lid which is conveniently hinged thereto and electrically connectable therewith, such as a 12 volt or 24 volt electricity supply via a battery or from the mains electricity supply via a transformer.

Conveniently, a thermostat may be provided, such as on or in the spacer collar to ensure that the chosen temperature is maintained.

The spacer collar itself may also be electrically heated through the use of electrically conductive heating elements and the tray itself may also be electrically heated through conventional means, either separately or through a single unified electric circuit.

Conveniently, a sensor may be incorporated into the propagator to sense conditions in which condensation may be induced, such as by a sharp drop in ambient temperature outside the propagator as compared to the air temperature within the propagator, a logic circuit then e.g. automatically switching the heating elements for the transparent cover or lid and/or the spacer collar on in order to prevent or inhibit the build up of condensation, the sensor also sensing when

conditions have changed such that the heating circuit may be switched off when an appropriate rise in ambient temperature has been noted.

The invention will now be described, by way of example only, with reference to the accompanying drawings in which:

5 Figure 1 is a perspective view of the rear of a plant propagator according to the invention, and

Figure 2 is a perspective front view of the plant propagator of Figure 1.

Referring first to Figure 1 a plant propagator shown generally at 1 is in three part form, namely a soil tray 2 for containing soil, a transparent spacer collar 3 and a transparent cover or lid 4. The cover or lid 4 is joined to the collar 3 by a pair of hinges 5 and the collar itself is detachably secured to the outer rim of the tray 2 so as to allow the tray 2 to be filled with soil as required or for existing soil to be replaced.

On the inside surface of the cover or lid is an electrically conducting heating grid or element 6 which may be a single flat copper wire extending over all or part of the inside of the cover or lid 4. The heating element 6 is connected to a thermostat 7 (shown in Figure) and a power inlet socket (not shown) by which it and the heating element 6 may be electrically activated. This may be by e.g. the insertion of a jackplug connected to a 12 or 24 volt battery (not shown) or where mains electricity is conveniently available a transformer (not shown) may be used to provide an electrical supply of a required voltage.

Although it is normally desirable to keep the inside of a propagator warm and moist nevertheless there are occasions when it is preferable to provide ventilation without opening the cover or lid and this is achieved via slidably

openable vents 8 around the periphery of the spacer collar 3.

In use, because the heating element 6 is disposed on the inside surface of the cover or lid 4, when it is operating because there is an imbalance between the temperature therewithin and ambient temperature such that the former is higher than the latter, particularly at night, condensation cannot form or if forms it immediately evaporates, thereby avoiding the formation of large droplets of water which could block sunlight, drip onto e.g. seedlings or delicate plants or otherwise act in an undesirable manner of running down the sides of the propagator to wash into the soil in the tray 2 and thereafter evaporate therefrom in a manner illustrative of prior art electrically heated plant propagators.

As well as the thermostat 6, a separate sensor (not shown) may be incorporated within the propagator to sense e.g. a sharp decrease in ambient temperature as opposed to the air temperature within the propagator 1 and through the use of a logic circuit switch the heating element 6 on until the temperature in balance ends, such that if, say, the propagator 1 has conventional under soil heating in the tray 2 the use of the heating element 6 may be selectively employed in order to specifically prevent or inhibit the build up of condensation, or if a conventional heating element is not present in the tray 2 the heating element 6 may heat the soil and air within the propagator 1, thereby dispensing with separate heating for the soil itself.

The invention, by borrowing technology from the automotive industry, therefore provides a neat and elegant solution to the prior art problems referred to above.

As will be evident to those skilled in the art, various modifications can be

made or followed in light of the foregoing disclosure and discussion without departing from the spirit or scope of the invention.

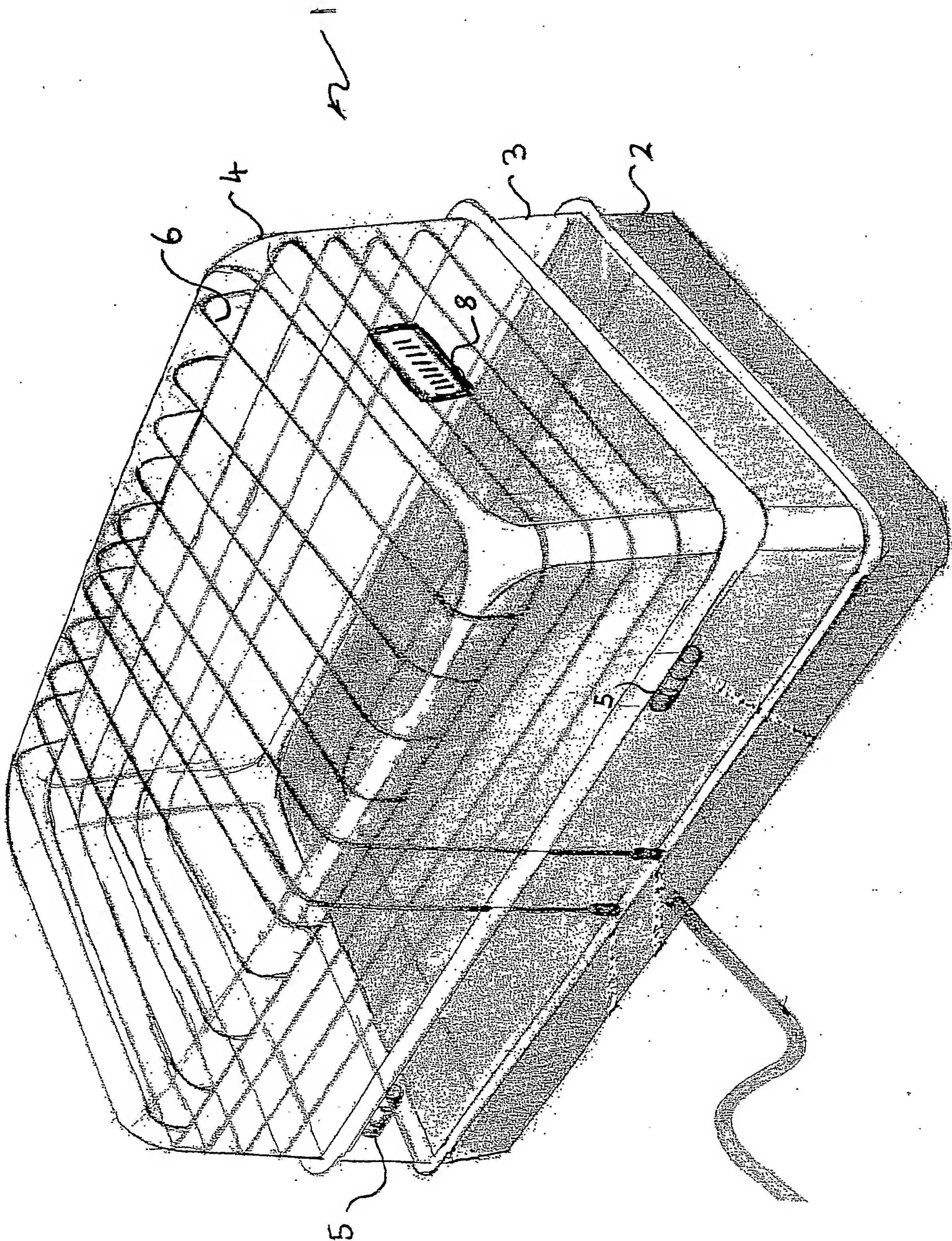


FIGURE 1



FIGURE 2

